VIRGINIA WILDLIFE

JANUARY 1959

VOLUME XX *Price 20 cents* NUMBER 1

Out of the bosom of the Air,
Out of the cloud-folds of her
garments shaken,
Over the woodlands brown and bare,
Over the harvest-fields forsaken,
Silent, and soft, and slow
Descends the snow.

—Longfellow

Photo by Leonard Lee Rue III

VIRGINIA WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia

A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting, Fishing and Outdoor Recreation in Virginia

COMMONWEALTH OF VIRGINIA

J. LINDSAY ALMOND, JR., Governor

Commission of Game and Inland Fisheries

COMMISSIONERS

BEVERLEY W. SIRAS, JR., *Chairman, Tazewell*

J. C. AARON ... Martinsville
DR. E. C. NETTLES ... Wakefield
H. G. BAUSERMAN ... Arlington
DR. W. B. RAINS ... Warsaw
T. G. HERRING ... Dayton
I. T. WALKE, JR. ... Norfolk
J. CARGILL JOHNSON ... Warwick City
T. D. WATKINS ... Midlothian
HOLMAN WILLIS, JR., Roanoke

ADMINISTRATIVE OFFICERS

CHESTER F. PHELPS ... *Executive Director*
EVELYN P. RUEGER ... *Assistant Executive Director*
RICHARD H. CROSS, JR. ... *Chief, Game Division*
G. W. BULLER ... *Chief, Fish Division*
LILLIAN B. LAYNE ... *Chief, Fiscal Division*
J. J. SHOMON ... *Chief, Education Division*
WEBB MIDYETTE ... *Chief, Law Enforcement Division*

VOL. XX JANUARY, 1959 NO. 1

In This Issue

	PAGE
Editorial	4
Good Watershed Management	5
The Riddle of Predation	8
Land Acquisition in the Commission's Program	10
Cooperative Agreements with Landowning Corporations	12
Public Hunting Lands in Virginia	13
Access Areas for Virginia Sportsmen	16
Duck-Hunting Techniques, Past and Present	18
The Bear in Early America	20
Bird of the Month: The Carolina Wren	22
Queen Creek — A Daughter of the York	23
Commission Briefs	24
Drumming Log	25
Commission Personalities	26
Wildlife Questions and Answers	27
Back Plate: Duck Shooting	28

Cover

The bobcat, photographed while balefully regarding Commission photographer Leon Kesteloo's camera, occurs throughout the wilder portions of the State of Virginia. It has its place in the "balance of nature" as James B. Trefethen explains on page 8.

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia

J. J. SHOMON, *Editor*
S. P. DAVEY, *Managing Editor*
M. R. CUTLER, *Associate Editor*
L. G. KESTELOO, *Photography*
FLORENCE BLANKENSHIP, *Circulation*

SUBSCRIPTIONS: One year, $1.00; two years, $1.50; three years, $2.00. Remittances by check or money order to be made payable to the Treasurer of Virginia. Local game warden will accept subscriptions or they may be forwarded direct to Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia.

VIRGINIA WILDLIFE is published monthly at Richmond 13, Virginia by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to the Commission, P. O. Box 1642, Richmond, Virginia. The editorial office gratefully receives for publication news items, articles, photographs, and sketches, of good quality, and other materials which deal with the wise use and management and study of Virginia's inter-related, renewable resources: soils, water, forests and wildlife. Because of pressure of editorial duties, however, the Commission cannot be held responsible for unsolicited manuscripts and illustrative material. Since wildlife is a beneficiary of the work done by state and federal land-use agencies in Virginia, editorial policy provides for full recognition of their accomplishments and solicitations of their contributions. Credit is given on material published. Permission to reprint is granted provided proper credit is given the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE and proper clearances are made with authors, photographers, artists and publishers.

Second-class mail privileges authorized at Richmond, Va. Additional entry Baltimore, Md., July 1, 1956.

More Public Lands Needed For Wholesome Recreation

ONE of the attendant problems faced by our skyrocketing population is space for wholesome recreation. The matter of adequate space in America has assumed a new dimension in our society. The big question is "What are we going to do with more and more people, with more and more leisure time on their hands, and less and less space for recreation for each individual?"

According to one authoritative source, the world's population advanced by 6 percent per decade between 1850 and 1900, by 7 percent between 1900 and 1930, by 10 percent between 1930 and 1950, and by 17 percent on a 10-year basis in the seven years betwen 1950 and 1957.

Today some 47 million mouths are added to our world's population each year. Before long it may be 75 million annually or even 100 million.

In the United States today our population now exceeds 175,000,000 and may rise to 250 million by the year 2000. What does this mean to an America rich in outdoor heritage? Only one thing: we'll have to guard our natural resources ever more zealously and every effort must be made to protect the public lands now in existence. In addition, there must be a redoubling of effort at the national, state and local level to acquire additional public lands where practical and where the need is greatest.

One aspect of the big problem faced by wildlife departments is the acquisition of more public lands for hunting and fishing. In Virginia, the Commission of Game and Inland Fisheries is becoming more conscious each year of the importance of public lands for hunting and fishing purposes. Each onrushing new year the ten members of the Commission and its hard-pressed staff are making every effort to meet the situation squarely.

To meet the developing crisis, the Commission has recently embarked upon a policy of land acquisition of public wildlife lands and access areas. First was a long-range program of building needed public lakes and ponds. Then came Hawfield, an experimental farm in game restoration. Hawfield proved too costly a venture and it folded, but it led to the acquisition and development of Hog Island, the popular waterfowl area on the James River opposite Jamestown. Then followed the lengthy negotiations over the Gathright tract and its final purchase in July 1958. This choice wildlife area of almost 19,000 acres was the first major outright purchase of a big area by the state in its 350-year history.

After Gathright, or during the final stages of its purchase, came Saxis Marsh on the Eastern Shore in Accomack County. While these purchases were being negotiated, other arrangements for public hunting were being made with the military and with private landowners. Agreements were being made for greater hunter use of the A. P. Hill reservation and Camp Pickett. Hunting leases were worked out with Union Bag - Camp Paper Corporation.

On the fishing side, a total of ten public lakes and ponds have been built by the Commission and three public access sites on two major rivers have been acquired and are being developed.

But this is only a start. More needs to be done. More public wet lands are needed. Some of our choice low country in the tidewater needs to be saved. With the lower Chesapeake Bay bridge-tunnel a virtual certainty, some of our remaining ocean beach country needs to be put into state ownership. More marsh country needs to be acquired and permanently protected.

The job is a big one. It cannot be done by the Game Commission alone. Other conservation agencies and groups must help in the effort. It is time to look boldly at the future, ascertain our needs, plan accordingly, and accept the belief that it is just as important to our national welfare to protect the naturalness of America as it is to put cosmetic changes on our material goods or to probe the outer universe with rockets and satellites.

—J. J. S.

"The cry of 'no more land' is something new to Americans only one generation removed from pioneering ancestors. But we are reaching the point, if we haven't reached it already, when all land use needs must be scrupulously planned and balanced in terms of the best interests of the American people as a whole. Healthy recreational outlets should have a high priority on any planning totem pole."

— James B. Craig, Editor
American Forests Magazine

U. S. Forest Service photo

Well-managed watersheds such as this Rocky Mountain watershed in Pike National Forest, Colorado, provide maximum amounts of useable water as well as forest products and recreational opportunity.

GOOD WATERSHED MANAGEMENT —

One Answer for Many Water Problems

By

C. R. HUMPHRYS

WATERSHED management is one of the most popular phrases in the conservation field today. Literally interpreted, it means the management of the water resources of an area of land that is drained by a stream or river. The actual area involved varies with the needs of the manager. The watershed may be as small as forty acres, with a small creek, or as large as the Tennessee Valley. The purpose is the same regardless of size. Most of our water problems revolve around supply and in the past we have solved these problems by increasing the supply. Watershed management provides for *serving more needs with the water we have available.*

Watershed management also implies that man is interested enough in water resources that he will expend time, money, and effort to control it. In brief—man becomes interested when water becomes scarce, the competition for water supply increases, or new needs are created.

The physical supply of water in any region is ultimately limited by precipitation. In the eastern United States *our supply of water is adequate*—if we will accept priorities of use, new techniques of management, and a modern philosophy of conservation.

The formulation of a realistic watershed management program requires facts—facts about the watershed; geology of ground water, water use and management, future needs, precipitation, water demands of vegetation, runoff and infiltration rates for soils, and stream flow. A doctor must examine you and arrive at a diagnosis of your condition before he can prescribe for your ills. A complete phsyical and cultural analysis of the watershed must be available before management techniques can be designed. We must brace ourselves for the cost of watershed management for it will cost money to collect and

One of the most widely recognized experts in the field of watershed management is Dr. C. R. Humphrys of Michigan State University, where he is professor of watershed management and where a new extended course on watershed management is being offered forestry students.

interpret all the information needed. The kind and amount of factual information will vary with the project; managing a national forest to provide high quality stream water is less complicated than managing a watershed with various land uses and numerous problems.

The foresters, farmers, and engineers have each developed good management techniques for holding and controlling water. Many of the current activities concerned with water management are geared to the solution of a single problem or the satisfaction of a single need. Future planning must incorporate multiple use. We can look at multiple use of water resources in several ways:

Sequence of use approach—Under ideal conditions, we could assign certain users to those areas in a watershed where their use would not conflict with other uses. An example would be a river that drains into the ocean. Up in the headwater regions, the streams and lakes could be allocated for recreational use. Clean water is required for recreation and other uses would be limited. Dams for hydro-electric plants might be compatible in parts of this headwater area. In the central portion, farming and residential areas would use the water. Both these uses require high-quality water. In the lower reaches, industries and cities could extract the water for waste treatment and disposal. This theoretical assignment of priorities would provide many users with the quantity and quality of water without creating hardships on any other group. Conflict of interests would be avoided, not by priority, but by locating the use or source of supply in physical sequence along the stream.

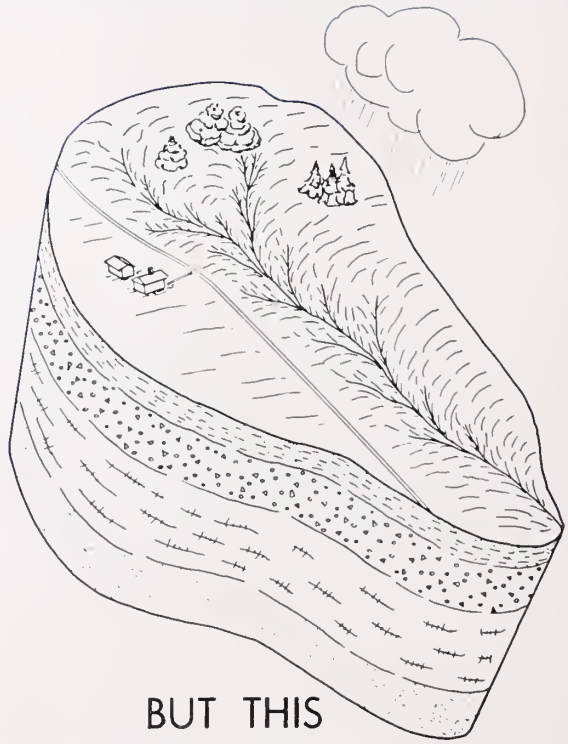
Simultaneous use—In many areas, several water needs can be serviced by a single source of supply. A stream may provide recreational benefits, be used for navigation and even be used for the generation of electricity.

Re-use—Many water users may find that as the supply of water becomes more scarce, they will be driven to re-use water over and over again, instead of using it once and then letting it flow away. This approach would stretch industrial water supplies and it may even be adopted by metropolitan areas.

Re-cycling—Re-cycling involves the use of water, treatment, and then re-use. An example would be the use of water for cooling. When the water is first used to cool machinery, it is heated up. This water is usually released, but it can be ponded until it cools down or run through a cooling tower to bring the temperature back down so that re-use is possible. With today's knowledge of water treatment, it is possible for cities to reclaim their waste water to meet their growing needs. Theoretically, a city could use water, treat their waste water and re-use it again with rather low losses. Their only need would be to replace losses.

NEED FOR WATERSHED MANAGEMENT

The areas that need watershed management have water problems. These problems vary from scarcity of water to flood damage, and include competition for existing water and plans for additional requirements. In all areas the basic problem is to make existing supplies serve more uses, do more work and satisfy more needs.



The dimensions involved in a description of a watershed include, in addition to length and width, depth, because ground water is merely a hidden part of the hydrologic cycle. The character of the soil and the nature of the geologic formations must be determined if the water system of any watershed is to be analyzed. Precipitation falling in one watershed may become the stream flow of an adjacent watershed via underground movement. Vegetation, climate, exposure, topography and geographic location are factors that limit the amount of water flowing out of a watershed. Some watersheds may actually use more water than they receive from precipitation. One dimension that is frequently overlooked is time. A watershed ages with time, the more obvious changes involving the character and location of the stream itself, which shows its age by sometimes threatening or destroying the use of land.

Recreation is often a byproduct of good watershed management. Here, skiers enjoy expanses of snow on the slopes of Mt. Disney in Tahoe National Forest, California.

U. S. Forest Service photo

GOOD WATERSHED MANAGEMENT

Good watershed management programs are based on facts, compiled by professionals, to meet the requirements of the people in the area. Obviously, all the individual desires cannot be satisfied. We usually are limited by funds available and must accomplish as much as possible. The goal of watershed management is not only to solve today's problems, but to plan logically and realistically for tomorrow. The solution of each individual water problem overlaps onto other water problems. A significant savings of money, time and effort is possible if all problems, all uses and all future trends are considered simultaneously. The benefits will be greater and more widespread with greater economy per dollar invested.

The most serious mistake possible in watershed management is the intentional or accidental failure to invite or involve representatives of all water uses to participate in the planning.

SURVEY

Many watersheds have certain components of a basic survey already available (soil, cover, geology and land use); however, a detailed analysis of water availability, its quality, its use and management must usually be compiled. Special attention must be focused on current problems and also on future needs.

PLANNING

All planners need data; in fact, few planners ever have all the data they desire. Planning, then, resolves itself into the compilation of a management plan, with the data available in accordance with the policy in effect.

IMPLEMENTATION

After the watershed management plan is completed, the remaining task is to explain it to all concerned (the public, special interest groups and agencies), and convince them that it should be put into effect. Normally, the plan is torn down and rebuilt several times before approval is won, but eventually the plan has to be "sold" before financial, social and legal backing is recognized.

NEW USES

Planning for the future usually considers the facts that are now available. When we plan for the future use of water, we cannot overlook the possibility of new uses —those uses, as yet, undiscovered or unknown. Why worry about problems as remote as these? If we look west, we will find that many states planned their water use in terms of an irrigation economy. Today, these states are struggling to provide water for cities, industries and recreation—uses that were unknown when the precedents for today's water priorities were established.

INTANGIBLE VALUES

The aesthetic and recreational values of water that revolve around fishing, boating, water sports and cottage sites are recognized by most people, but we have not developed a satisfactory method of applying these values in watershed management. Sportsmen have frequently been the "forgotten element" in watershed management plans.

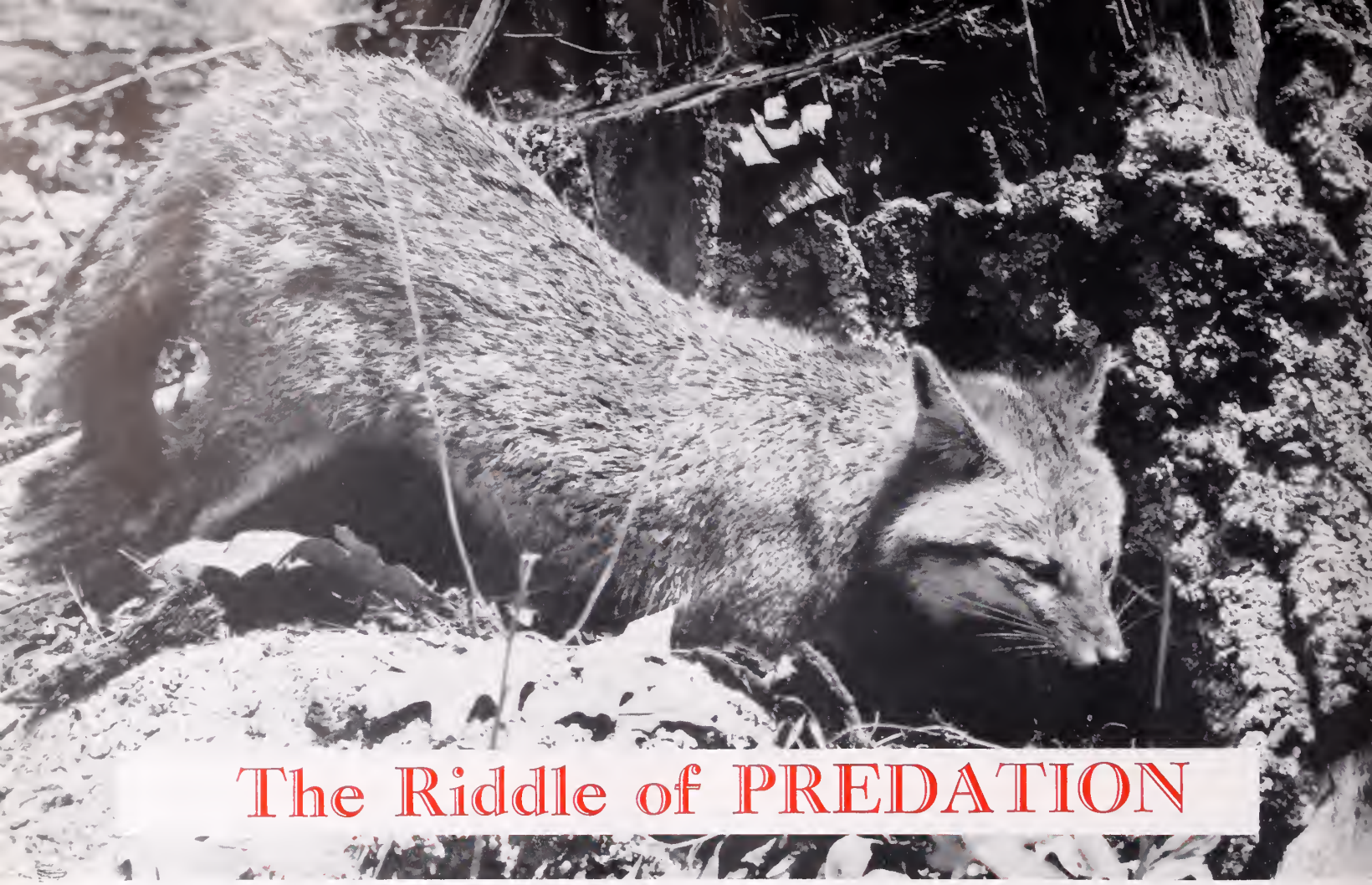
GROUND WATER

Ground water and surface water are merely component parts of our water resource. In the past, planning has emphasized only the surface water aspects of a watershed, but we now recognize the relationship of surface water to ground water and plan accordingly. Stream flow and lake levels are directly related to ground water levels.

CONSUMPTIVE USE

Water uses that *reduce the physical volume* of water (irrigation 99%, industrial cooling 20-70%) or *destroy its quality* (pollution), create special problems. Water for consumptive uses may have to be obtained from several sources, be stored for future use, and more efficient utilization practices must be developed. Pollution is a chronic illness of eastern United States. Many years of research, education and law enforcement will be required to rejuvenate our streams. Pollution is not generally accepted as a consumptive use, but it is just as effective in reducing water supply for recreational uses as

(Continued on page 11)



The Riddle of PREDATION

Commission photo by Kesteloo

By

JAMES B. TREFETHEN

THE fox, its coat a splash of red against the black backdrop of the hedgerow, padded silently along the edge of the orchard. Suddenly it stopped, forefoot raised, sharp nose turned toward a clump of broomsedge, for all the world like a miniature bushy-tailed bird dog. Then belly low, it crept forward, ending its stalk in a pouncing rush. The hidden rabbit burst from cover like a released coil spring, but the white fangs caught it in mid-air and drove it to earth. There was a flurry of motion and a shrill squall as closing jaws drove the final breath from the body of the cottontail. Then the triumphant hunter lifted its limp victim and trotted back toward its distant den.

In the interpretation of this little everyday drama lies the key to the riddle of predation, a riddle so wrapped in threads of myth, legend, folk-lore, and prejudice that it may never be solved to the satisfaction of everyone. To many it would mean that foxes are killing off all the game and that next hunting season there will be one less rabbit, or possibly five or six less when the rabbit's offspring are considered in the tally. But is this the true meaning of the incident? It would pay the sportsman to examine predation through the eyes of the biologist if he cares to spare himself hard feelings and save cold cash; because ill-advised predator control programs forced upon fish and game departments have wasted more funds than any other single practice used in game management.

A predator, in its dictionary definition, is an animal that kills and feeds upon other animals, but this definition is so broad that it includes even field mice and robins, and certainly man himself. Bobwhite chicks subsist on an almost strict animal diet during their first weeks of life, and I have seen young ring-necked pheasants kill and eat newborn mice with the skill and gusto of great horned owls.

Then let's use the popular definition to include only the "vermin"—those species which conflict with the interests of man. But when the fox killed the rabbit, was it conflicting with the interests of man? It all depends upon the man. Fox hunters and trappers would side with the fox; and the orchard owner, who might have lost nursery stock to rabbits, would applaud its act. The poultry farmer would have no particular feelings one way or another so long as the critter stayed away from his chicken runs; but the small game hunter might say that

Mr. Trefethen is a well known wildlife journalist and editor of the very popular *Outdoor News Bulletin* issued bi-weekly by the Wildlife Management Institute, Washington, D. C.

the state ought to put a price on the scalp of every blamed fox in the state. So whether the fox is, or is not, a varmint all depends upon the personal interests of the individual. The same would apply to human attitudes toward any predatory animal.

Wildlife biologists, however, serve the public at large, including fox hunters, upland game shooters, poultry farmers and orchardists, and if they are doing the job for which they are paid, they must bury any personal prejudices in the quest for the truth. They also have some facts, gathered from personal observations and from studies in their own and other states which are not always available to the farmer or sportsman.

In the first place, foxes and a lot of other predators have been killing rabbits since the species evolved many hundreds of thousands of years ago. Had there been no predators the cottontail might have evolved as a sluggish, half-tame ball of fur with all the game qualities of a pet house cat and bobwhite would be as interesting to hunt as bantam pullets. The alertness, speed, and evasive flight of game species are heritages of a long association with foxes, hawks, owls, and weasels, which have molded the habits of these species by culling and selective breeding as surely as animal breeders have used these methods in developing specialized strains of livestock. To this extent, at least, the hunter is in the debt of the predator.

But when foxes or other predators become numerous, isn't there danger of their wiping out the game? The answer to this one lies in several facts. First, is what the biologist calls the relative biotic potential of predators and prey species. This is a ten-dollar term which means the capacity of a pair of any species to reproduce. It is the sum total of litter size, age at which breeding starts, life expectancy, and other factors. The more natural population controls, including predators, a species has, the faster it breeds. Rabbits and squirrels have fantastic rates of reproduction, but even these are dwarfed by those of the mice, which in turn are slow breeders when compared to frogs; and insects would devastate the earth if all their larvae grew to maturity and survived for only a few weeks. For a predator, the fox has a relatively high breeding potential, but it is far lower than that of the rabbit. Nature herself provides these surpluses to compensate for expected losses between breeding seasons.

Foxs and most other predators, contrary to some opinion, do not live exclusively on game birds and mammals. Their diets have wide range, and they will take whatever is most readily available. The fox, in fact, has a surprising range of items which are found regularly in its diet. If it can find a high concentration of rabbits unprotected by good escape cover, it will dine on cottontail, but day in and day out its food consists predominantly of fruits, insects, mice, frogs, fish, and carrion. The broad-winged hawks take practically no game, and the sparrow hawk is largely insectivorous. Even the swift-winged accipiters and larger falcons, whose diets consist largely of freshly killed animals, do not distinguish between game birds and song birds, or between cottontail rabbits and muskrats.

While dove hunting last fall, I watched a Cooper's hawk pursue a mourning dove. At the last instant, the dove sideslipped into a thorn-apple tree, the commotion flushing a blue jay from its branches. Without checking its flight, the hawk struck the jay, and carried it to a distant perch, apparently quite content with the substitution on the menu. This variety in diet, of course, tends to disperse pressure on any one prey species.

Predators are a highly mobile lot, another fact that tends to distribute the effect of their hunting over wide territories, while most game species live out their lives on a relatively few acres. During the fall, foxes really move. In Michigan biologists trapped and tagged fifty young foxes during early summer. Thirty of the released animals were recovered later. The average of these had moved 43 miles, while one would-be Marco Polo had put 166 miles between himself and his place of birth. Hawks are migratory, some species traveling many thousands of miles between summer and winter territories, and even the crow, not generally regarded as a migratory species, shifts its operating area several hundred miles between winter and summer.

The presence of large concentrations of predators is a pretty sure indication to the biologist that there is a lot of prey in the area. It may be rodents, game birds, song birds, or insects which are becoming overabundant in a particular locality, but you can bet that when predators gather in numbers or pause long in their wanderings, they do so only where the livin' is easy. Any such concentration lays a banquet table for the predators, and they require no engraved invitation to take advantage of it. Once the overpopulation is whittled down to size, they will move on, leaving behind a healthier if somewhat smaller population of prey.

So let's protect all the predators! But that won't do either. There are certain conditions under which preda-

(Continued on page 22)

The hunter is in the debt of the predator. The alertness, speed and evasive flight of game species are heritages of a long association with foxes, hawks, owls and weasels.

LAND ACQUISITION IN THE COMMISSION'S PROGRAM

By

CHESTER F. PHELPS

Executive Director

VIRGINIA sportsmen will be interested to know that the Commission of Game and Inland Fisheries is thinking of the future and has recognized land acquisition as a long-range policy. This means that more and more attention will be given to the issue of where the average citizen will be able to hunt and fish.

Actually, acquiring public lands for hunting and fishing in Virginia is not a new idea. Down through the years the Commission has wrestled with the problem of acquiring public wildlife lands. Many will remember the acquisition of Sussex Game Refuge and the Havens Refuge back in the 'thirties. With the inauguration of the model Cooperative Agreement covering wildlife management on the two national forests of Virginia, definite assurance was made that hunters and fishermen would always have a place to enjoy their outdoor pursuits in the western mountains on at least 1,500,000 acres of public land—the combined acreage of the George Washington and Jefferson National Forests. This program was adopted back in 1937. No more exemplary program of cooperative forest-game management exists today in the United States and, for the purpose of public hunting and fishing, the arrangement is just as satisfactory as if the Commission actually owned the land.

Land acquisition by the Commission as a definite program did not really begin until 1951 when the Commission purchased the Hawfield Tract in Orange County. This was the forerunner of such subsequent land purchases as Hog Island, the Gathright Tract, Saxis Marsh and access areas to the James and Shenandoah Rivers.

It is true that in the evolution of a land acquisition program, the Hawfield area was sold, as was the old game farm near Providence Forge and the Sussex Refuge property. This, however, was more of an exchange of one form of land for others of more value to sportsmen. Monies from the sale of the old game farm near the Chickahominy River went for improvements of the Cumberland Game Farm, a much better site for wildlife propagation. The proceeds from the sale of the comparatively small Sussex Game Refuge and the Hawfield Tract went into the Game Protection Fund of the State's Treasury and this has been used in a large measure for wildlife land purchase and development work.

A firm, definite policy of land acquisition is a difficult thing to evolve, which is why each prospective purchase has been considered on its own merits. For example, what should be the maximum and minimum size? Where should the area be located? What species should it benefit? What is the maximum price to be paid per acre? These and other questions must be answered and the answer to one question is often dependent on the answer given to one or more of the other questions.

As to size, the larger the area the better, generally speaking, and no area has yet been turned down because it was too large. But when is an area too small? This depends partly on administrative and development costs, which are often influenced by the site's relative location to other established work units and personnel; also, on what game species the area will benefit.

While management areas for all species are desirable, probably waterfowl are most in need, as available wetland is disappearing more rapidly than is upland habitat. Well-developed, well-located wetlands may cost several times as much per acre as good upland areas, yet this price must be paid if we are to acquire them.

It would be most desirable for more public hunting lands to be located in eastern Virginia but, due to the type of land use and other factors, it is next to impossible to acquire areas large enough for efficient and effective management. Here, too, costs per acre are considerably more than for comparable land in other sections of our state. With the many variable and changing factors involved, it seems best to continue the policy of considering each area on its own merits.

Attendant to outright land purchases by the Commission is the important activity of "cooperative agreements" to permit hunting on military and private lands. Public hunting of a controlled nature is now permitted on the A. P. Hill and Camp Pickett military reservations and agreements have been reached which permit public hunting on several large private properties. The Union Bag-Camp Paper Corporation and the Lehigh Portland Cement Company have opened some of their holdings to hunters under special agreements recently reached with the Commission. More such arrangements are in prospect.

The average sportsman might want to know why the Commission has not moved more swiftly in its land ac-

quisition work. The questions might be raised, "Why has not more property been purchased in earlier years when land was cheap?" or, "Why the long wait for the purchase and acquisition of access sites and roads to the important hunting and fishing areas?" There are some good answers for these questions. For one, the Game Commission operated on a very small budget until the conservation era of the early 'forties. Even then, with the inauguration of the Pittman-Robertson program, money for land acquisition purchases was quite scarce. Secondly, the Commission was further handicapped in the earlier years in lacking a sufficiently well-trained staff to appraise wildlife conservation needs and recommend procedures.

It was not until after the war that the Commission was able to hire sufficient technical personnel to embark upon a long-range program of fish and game restoration work. Land acquisition was given consideration at that time and this effort slowly evolved into the present land acquisition program. Today the program is seriously handicapped by the terrific inflationary period we find ourselves in and the rising cost of lands everywhere. The Commission's dollar no longer can buy as much as it did in the early days while at the same time the price for good wildlife land has doubled, even trebled.

It is a popular fallacy that land which is worthless for agriculture or other important land uses is good for wildlife. Nothing can be further from the truth. The most fertile lands, the most productive lands, are also the most productive of wildlife, and the cheapest, poorest, most unfertile lands are also largely devoid of much wildlife production. It would be folly, therefore, for the Commission to acquire public lands on whose acres wildlife productivity is considered low. To meet the ever-growing demand for more and more hunting and fishing areas and to give our people the quality of outdoor recreation that they deserve, it is very necessary for the Commission to consider all angles of a land purchase.

Furthermore, available wild lands are growing scarcer by the minute and will probably grow even scarcer in the immediate years to come. This means that what the Commission can do, at best, along land acquisition lines will still be short of what is really needed. However, a wonderful start in the right direction has been made and it is the hope of the Commission and its staff that the sportsmen and public generally will support its program to provide in the future the greatest amount of outdoor recreation for the largest number of people and for as long a period as can be visualized.

WATERSHED (Continued from page 7)

irrigation and industrial cooling.

One of the lessons we have taught ourselves is that water pollution creates long-lasting problems. Ground water is also subject to pollution and mismanagement. Perhaps we can profit from past mistakes and guard our ground water for future use.

There is always the possibility that a cheap efficient method of salt-water treatment can be derived; however, no new process of water treatment will solve all our present water problems. The cost of treatment and cost of distribution will still confront us and it is evident that a solution for many areas must be found within the watersheds themselves. The final decision as to alternate solutions will be decided by taxpayers who must not only consider their physical water needs, but also the economic, social, political and legal aspects that will inevitably be involved.

VEGETATION CONTROL

Vegetation consumes 60-80% of our precipitation in the eastern United States. Liquid water pulled from the soil by plant roots is thrown into the air, as vapor by leaves. This is classified as a consumptive use, because the total volume of available liquid water is reduced. We may someday want to carefully regulate the kind and amount of vegetation that grows in a watershed, so that the amount of available water may be regulated to meet needs.

FLEXIBILITY

A completed watershed management plan should never be accepted as the final solution. A watershed is highly dynamic and it follows that a plan for a watershed should also be dynamic. As land use and water needs change, plans must also be changed to meet the challenges of progress.

PIONEER SPIRIT TODAY

Our nation once flourished as a pioneer society. Individualists, with sufficient knowledge and courage could "shoot for the moon" without fear of reprisal or interference from their associates or governmental units. Today we merely revel in the memory of our pioneer ancestors. We live close together, our lives and efforts are interdeveloped and laws have evolved. No longer can the individual be independent in the use of natural resources. Any cultural activity that may result in a direct or indirect effect on the lives and property of others is carefully scrutinized. Group effort is required to solve group problems. In watershed management, we strive to solve the water problems of the entire watershed, without creating an undue hardship on anyone—regardless as to whether he is located inside or outside of the watershed.

BROAD POLICY FOR WATERSHED MANAGEMENT

1. High degree of local participation, including financial, social and legal support.
2. All interests and water uses should be involved or represented.
3. Management planning should be based upon "hard," local facts, not just academic theory. No amount of theory will serve as a substitute for an accurate physical survey of the watershed.

(Continued on page 17)

One Answer to the Increased Demand for Public Hunting and Fishing Areas:

Cooperative Agreements With Landowning Corporations

By RICHARD H. CROSS, JR.
Chief, Game Division

WHEREVER sportsmen gather, the conversation eventually turns to the old problem of finding a place to hunt. Casual observation reveals that more private lands are being closed to trespass each year, and of course this is the landowner's privilege. In many cases, lands are posted as the result of unsportsmanlike conduct. In others, the owner simply desires privacy to which he is certainly entitled. Other closures are brought about by the lease of lands for hunting to those who can afford it. Private hunt clubs have become increasingly popular in recent years.

The rural hunter and some of his more fortunate city cousins have landowner friends and thus their problem is solved. Few landowners will refuse hunters who take the time to become acquainted. However, there remains a large number of people who find themselves at the beginning of each season with limited areas upon which they might legally engage in their favorite sport.

Hunting lands in Virginia might be classified as:

(1) Public: state and national forests, game commission-owned lands, and certain military reservations.

(2) Leased: privately-owned lands upon which hunting rights are leased by clubs or individuals annually, and

(3) Private: lands which may be hunted with verbal or written permission.

In recent months, public-spirited landowning corporations have added another category to this list by making available additional lands for the Virginia sportsman's use. Through cooperative agreements, large acreages have been turned over to the Virginia Commission of Game and Inland Fisheries for wildlife management and public use.

Your Commission has assumed a great responsibility in accepting these lands. It has pledged to:

(1) Manage the wildlife in harmony with the management of all other renewable resources. For example, deer numbers must be kept well within the normal carrying capacity of the range to prevent damage to forest reproduction.

(2) Furnish and erect signs on boundary lines indicating the intent of the agreement.

(3) Assign personnel to patrol during hunting and fishing seasons, during periods when fire danger is high and at other times when the purposes of the agreement can be furthered.

(4) Assist the corporation in the prevention of illegal trespass.

(5) Permit hunting and fishing for game species by properly licensed hunters and fishermen under applicable rules, policies, regulations and laws promulgated by the Commission and/or the Virginia General Assembly on all lands covered by the agreement.

Your Commission also feels that it is morally obligated to do everything possible to encourage and insist upon proper use of these lands by all sportsmen at all times.

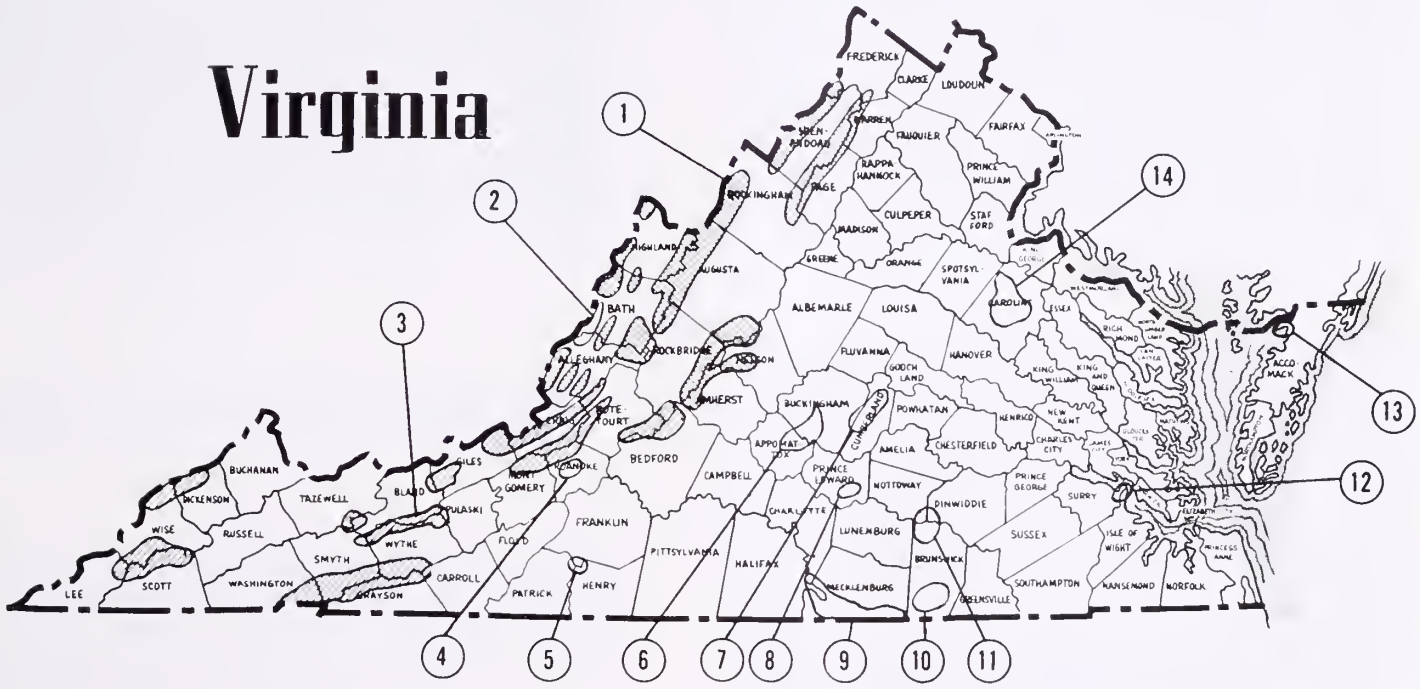
Corporations now making their lands available for public use include:

Landowner	County	Acreage
Union Bag - Camp Paper Corporation, Franklin, Va.	Brunswick	15,000
Lehigh Portland Cement Company, Fordwick, Va.	Augusta and Rockbridge	6,100

These cooperative agreements have been purely voluntary on the part of these landowners and certainly indicate their concern for the individual and their willingness to provide the opportunity for untold hours of wholesome recreation.

If sportsmen will show proper respect for the landowner's rights, there is every reason to expect Virginia's public hunting and fishing areas to increase in number in the future.

PUBLIC HUNTING LANDS in Virginia



① **George Washington National Forest:**
900,000 acres of prime hunting and fishing lands located in the Alleghany, Blue Ridge and Massanutten Mountains of that section of Virginia north of the James River and west of the Blue Ridge. Easily accessible from main routes U. S. 11, 60, 250, 33 and 211. Game includes rich supply of deer, bear, turkey, grouse, squirrel. Also available are fox and bobcat. Many of mountain streams are stocked regularly with brook and rainbow trout. National forest stamps costing one dollar required in addition to regular hunting and fishing licenses.

② **Gathright Wildlife Management Area:**
18,000 acres of Commission-owned public hunting and fishing land located in southwest Bath County and northwest Alleghany County, about 15 miles north of Covington. Excellent forest game area. No special permits required.

③ **Thomas Jefferson National Forest:**
600,000 acres of excellent public hunting and fishing lands located in mountain areas of southwest Virginia. Accessible from routes leading off from U. S. 11. Potential same as on George Washington except for scarcity of wild turkey. National forest stamps required for hunting and fishing.

④ **Haven's Wildlife Management Area:**
6,264 acres of Commission-owned lands in Roanoke County on Fort Lewis Mountain. Accessible from Rt. 311. Forest game supply good. No special permits required.

⑤ **Philpott Reservoir Wildlife Management Area:**
4,750 acres of land cooperatively managed by Commission and Corps of Engineers. Located near boundaries of Franklin, Patrick and Henry Counties. Game supply limited to small forest game. No special permits required.

⑥ **Buckingham-Appomattox State Forest:**
18,534 acres of public hunting land cooperatively managed by Commission and Division of Forestry. Located east of Appomattox off of Rt. 24. Excellent deer and small game supply. Special permit costing one dollar required — obtainable from Headquarters, Division of Forestry, Farmville.

⑦ **Cumberland State Forest:**
15,105 acres similar to Buckingham-Appomattox Forest. Located north of Cumberland along Rt. 622. Excellent deer and small game supply. Special permit same as above (these good whole season on all state forests).

⑧ **Prince Edward State Forest:**
6,365 acres similar to other state forests except game supply limited. Located largely north of Green Bay between Rts. 696 and U. S. 360. Special permit required (see above).

⑨ **Kerr Reservoir:**
Approximately 50,000 acres of public lands bordering Buggs Island Lake. Cooperatively managed by Commission and Corps of Engineers. Located in Mecklenburg County along Rt. 58. Game supply limited, best for small game. No special permits required.

⑩ **Union Bag-Camp:**
Approximately 15,000 acres of land cooperatively managed by Commission and Union Bag-Camp Paper Corporation. Game supply includes forest game and small game. No special permits required. Located in small tracts in Brunswick County.

⑪ **Camp Pickett:**
47,000 acres of public shooting land cooperatively managed by Commission and Department of the Army. Excellent deer, turkey and small game supply. Located east of Blackstone along Rt. 40 in Brunswick, Dinwiddie and Nottoway Counties. Special permit required, no charge, from Army at post.

⑫ **Hog Island Waterfowl Refuge:**
2,100 acres of Commission land located north of Bacons Castle in Surry County. Hunting limited to archery season early fall. Serving as excellent waterfowl feeding and resting area.

⑬ **Saxis Marsh:**
4,500-acre marsh land recently purchased by Commission in Accomack County near Saxis. Some waterfowl shooting but mainly a feeding and resting area.

⑭ **Camp A. P. Hill:**
77,000 acres of public lands cooperatively managed by Commission and Department of Army. Excellent area for deer. Also some small game. Special permits required from Army post.

Camping during the early archery season at Hog Island Waterfowl Refuge provides added recreation for the long bow enthusiasts. Fourteen deer were taken here in 1958.

This aerial view of Saxis Marsh shows why the Commission was anxious to procure it as a waterfowl feeding and resting area.

Typical mountain country of the Gathright Wildlife Management Area provides excellent deer hunting for these sportsmen.

The expansive acres of the George Washington National Forest, whether duri winter from the Commission or from Supervisor, George Washingt ation

Public Hunting Lands Aro

Commissio ts b

The acreage of public hunting land in Virginia i grow acres are now open to sportsmen in areas scattered ros one-half million acres of national forest lands ailab Virginia Game Commission is also cooperating wi pri amount of land open to blic

This grouse and deer country in the Jefferson National Forest is duplicated dred visor, Jefferson National Forest, Federal Buildi ond

g inter or summer, are enjoyed by thousands. Further details are available n lational Forest, Federal Building, Harrisonburg, Virginia.

Deer, quail, rabbits, squirrel and, if populations permit, turkey are sought on the state forest lands. (In 1958-59 these areas are open the entire season, only turkey being illegal this year.)

Around the State Circuit

p tos by Kesteloo

rowing almost daily. Nearly one-quarter million a ross the state in addition to the fabulous one and vilable in the western mountain counties. The t private landowners in an effort to increase the p lic hunting and fishing.

hdred times on these public lands. Again, the Commission or the Super- g, oanoke, Virginia, can furnish more details.

Some waterfowl shooting is available along shores of Buggs Island Lake in south-central Virginia.

Several hundred deer are taken each year from the Camp A. P. Hill military area in Caroline County.

Quail and rabbits have increased tremendously through game management at Camp Pickett.

Union Bag-Camp lands offer a variety of game, including this plump squirrel.

ACCESS AREAS FOR VIRGINIA SPORTSMEN

By JAMES E. THORNTON

Commission photos by Kesteloo

ONE of the most serious problems that has confronted the sportsmen of Virginia and the Commission of Game and Inland Fisheries in recent times is the increase in the posting of private land against hunting and fishing. This is being brought on by the buying up and subsequent posting of private land for hunting and fishing purposes and by the abuse of the property rights of landowners by a minority of the hunters and fishermen.

The problem of posted land in the immediate vicinity of the two national forests in Virginia, the George Washington and the Thomas Jefferson, while evident, takes a different turn from that in the eastern part of the state. All of this national forest land is open to public hunting and fishing under Commission regulations, and much of it is easily accessible to the hunting and fishing public. A good portion of it, however, is blocked off from public use by the posting of land along public roads in the forest area. In general, the national forest land lies along the ridge tops and the relatively steep land adjacent to the ridges, while the fertile valleys lying between the ridges and mountains is in private ownership. In many instances, this narrow strip of private land cuts off access to the publicly owned land behind it. The same general situation applies to the major rivers of the area such as the Shenandoah River. Access to this river, which is recognized as a navigable stream and therefore open to the public, is extremely limited due to the private land along both of its banks.

Many landowners along the river and adjacent to the national forests do allow hunters and fishermen to cross their property to reach public hunting and fishing areas but, even in these instances, access is subject to the owners' wishes.

For several years now, the Commission has been working on the problem of obtaining public access to public hunting and fishing grounds where they are most urgently needed. The program has been speeded up within the past 18 months since funds have been provided for this important work.

In an effort to provide needed access to national forest lands in Virginia, a considerable amount of effort has gone into locating existing rights of way across private land to the national forest lands and in acquiring and developing rights of way where none existed. For example, the U. S. Forest Service acquired a number of rights of way with the land when it was purchased, but, due to the passage of time and the lack of personnel necessary to maintain them, many of these rights of way were "lost in the shuffle." These land acquisition records are being reviewed and pertinent information concerning the rights of way now in existence is being extracted. Where these rights of way provided needed access to public land, they have been or will be developed by the Commission or the U. S. Forest Service. The searching of these records is a time-consuming job, but to date 62 such rights of way have been discovered.

In areas where no such rights of way exist and the need is considered sufficient, rights of way are being purchased outright by the Commission. In addition, a number of rights of way have been given to the Commission by public-spirited citizens.

In all cases, rights of way have been or will be developed by constructing access roads for sportsmen. A good example of this activity is the Bratten-McGuffin Hunter Access Road. This two-mile road, built across private land on a right of way given to the Commission, permits access to national forest land on the south end of Back Creek Mountain in Bath County. Other roads such as this will be built as time and money permit.

Much remains to be done in this direction, as it has been estimated that only about 35 percent of national forest land is intensively hunted. U. S. Forest Service and Commission personnel estimate that at present there are only 125 rights of way suitable for development on the George Washington National Forest and that approximately 275 more are needed.

Mr. Thornton is one of the senior members in the Commission's game division and holds the title of supervising biologist, George Washington National Forest. He is stationed in Deerfield, Virginia, in Augusta County.

The Virginia Commission of Game and Inland Fisheries has an active program underway to acquire access areas.

Access to the Shenandoah River presents a comparable problem. Many miles of public fishing water in this river are not used by the general public because the river is inaccessible for much of its length. The Commission has long recognized the need to provide access in this area and is now in the process of acquiring and developing public access at several points along the river. This, too, is a time-consuming job and the number of areas which may be acquired seems to be extremely limited. Progress in this direction has been made, however, and more is anticipated.

One area, the Foster Landing in Page County, has already been acquired and developed by the Commission. The use of this area has exceeded by far the expected use, thus emphasizing the need for additional access sites on the river. Other areas are under option for purchase by the Commission and will be purchased and developed as time and money permit.

In addition, the Virginia Department of Highways is cooperating with the Commission in the development of access areas at bridge sites where major roads and highways cross the river. Detailed plans are in the process of being drawn up for the development of such areas and, once developed, such access should provide many additional miles of fishing water for Virginia sportsmen.

The procurement of public hunting and fishing ground access areas has only begun, but progress has been encouraging. The important thing is that the problem has been recognized and that an active program to acquire access areas is underway. The program was not started a moment too soon, as such areas will become increasingly difficult to obtain as time goes by. While the acquisition of rights of way across private land to public hunting and fishing grounds will not solve all the problems concerning a place for the sportsman to pursue his sport, it will go a long way toward improving the situation. In addition, it will tend to minimize the trespass problems adjacent to public lands and waters where access is now limited or non-existent. Landowners and sportsmen alike stand to gain as this program gains momentum.

A typical sportsman access road in Virginia is the West Augusta Trail on the George Washington National Forest in Augusta County.

WATERSHED (Continued from page 11)

4. Surface water and ground water are so dependent upon each other that both classes of water must be considered as parts of a single water resource.
5. Intangible values of water should be recognized and incorporated into planning. Watershed management is not 99% engineering—more truly it represents a social expression of current water needs and future desires for water management.

The public most frequently must guess at policy. This situation results, not from the absence of policy, but from the habitual failure of interest groups and public agencies to "spell it out" in writing. Policy is a statement of basic beliefs and ideals.

WHO MUST BE SATISFIED

A man who approaches watershed management with good intentions to stay objective, soon finds himself the target of special interest groups. These groups can be quite influential and must be treated with proper consideration. In planning watershed management programs, it is relatively easy to secure a complete understanding of the needs and desires of each and all of the water use groups, but we experience a sense of frustration when all their desires and needs are superimposed, simultaneously, upon a watershed. It becomes clearly evident that everyone will not get all the water of the quality he desires at the time and place he needs it. The final decision as to priorities involves a long-term educational program for all involved. A cooperative program aimed at multiple use may not provide all water users with the total amounts desired, but the over-all cost can be reduced and the ideals of multiple use can be realized.

Duck-Hunting Techniques, Past and Present

By J. CREIGHTON RIEPE, JR.
Charlotte Court House, Virginia

WHEN the waterfowl season opened in Virginia in 1957, hunters found ducks and geese fairly plentiful but they were not able to use a device which American ingenuity developed several years ago to entice ducks and geese within gun range. This lethal gadget consisted of either a record or tape with portable, battery-operated equipment for reproducing the sounds created by flocks of feeding birds. These recordings proved so effective in luring game that the U. S. Department of the Interior, which regulates the taking of migratory fowl, outlawed them to the extent of establishing a fine of $500 for their use. Undoubtedly, there have been fewer ducks and geese killed during the past two seasons than would have been killed had the use of these recordings been permitted.

The nullification of this latest effort on the part of waterfowl hunters to lure ducks and geese makes just one more addition to a long list of devices used in the past but which are no longer allowed. Most of these schemes produced spectacular results as far as the hunter was concerned, but if they had not been banned, it would probably have resulted in no waterfowl shooting today.

One of the oldest means of attracting ducks was developed in Europe and is probably still practiced in some isolated places there and in England. It is doubtful that it was used to any extent in this country. A funnel-shaped trap was built on a pond or lake frequented by the birds, and with the use of domesticated ducks and a small especially-trained dog, wild ducks were enticed into the trap. The toll dog, as he was called, on instructions from the hunter, momentarily exposed himself to the ducks' view and then disappeared behind a barrier which paralleled the trap and also concealed the hunter. The

One of the most ingenious and deadly means of deceiving ducks was by use of the sink box or battery. These water-tight, coffin-like boxes undoubtedly were responsible for the death of more ducks than any other type of blind.

curiosity of the ducks drew them slowly up the narrowing funnel as the dog progressed, repeating his performance, until they had reached a point beyond which they could not escape when the hunter placed himself between them and the open water they had left behind.

The development of guns and the desire of Americans to use them was probably one reason this method of taking ducks did not flourish. Of course, it was not very sporting, and the trap was of necessity very large and difficult to build and maintain.

Some trapping of ducks was done in this country by stretching a net under the surface of the water and baiting the area under the net. The birds were able to reach the corn, but when they tried to ascend were caught in the net. All trapping of migratory birds is now illegal.

The American Indian developed the first artificial duck decoys, fashioning them from reeds, feathers and crude dyes. Of course, the game was shot with bow and arrow. The use of stuffed bird skins naturally followed, but these decoys were not very durable. It is believed that the first wooden decoys used in America were produced in the early 1800's. The wooden decoy, handmade at first but factory made now, has always been the most important type of decoy used in this country. Today decoys are also made of rubber, plastics and other materials.

The use of live ducks tethered near the hunter's blind also produced excellent results, and this method of attracting ducks and geese was declared illegal in 1935. Corn and wheat as bait were used extensively for decades, but this practice likewise depleted the duck population at too fast a rate and was banned after the 1932 season.

Many types of blinds have been used to conceal the hunter. Local conditions usually dictate the type of blind used. Camouflaged sneak boats were very popular at one time in many places. The hunter drifted or sculled within range of flocks of ducks on the water, and frequently shot them "sitting" with large guns, often killing dozens of birds with a single shot. This system was known as "bushwhacking."

One of the most ingenious and deadly means of deceiving ducks was by use of the sink box or battery. These were water-tight, coffin-like boxes, usually built to accommodate one man lying on his back. Some double boxes, permitting two men to lie side by side, were also used. Sink boxes date back to the first half of the 19th century. They required a lot of hard work, but undoubtedly were responsible for the death of more ducks than any other type of blind. The box was taken well out from shore in shoal bays, such as Great South Bay, New York; Barnegat Bay, N. J.; Chesapeake Bay, Maryland; Back Bay, Virginia; and Currituck Sound, North Carolina.

The box was built with wide flaps, on which cast iron decoys were placed to sink it to the desired level, usually to within a few inches of the surface of the water. The rig was anchored fore and aft, and 200 to 500 wooden decoys were anchored within gun range. The gunner then laid down to await developments. On Back Bay, Virginia, the depth of the water permitted the use of boxes in which a man could sit, which added greatly to the hunter's comfort. The attending boat moved off down wind or down tide to pick up fallen birds.

Diving ducks — canvasbacks (*sine qua non* from the epicure's standpoint), redheads and scaup (colloquially called blackhead, broadbill, bluebill) — were the primary victims. These birds usually travelled in large flocks and flew close to the water, therefore being unable to see the hunter in the sink box until it was too late. As the flights passed over the stool the gunner sat up and fired. Usually, after a couple of hours of shooting, a second man from the tender took over the gun.

Sink boxes were used extensively by the market gunners, and, although it is difficult to find written records of their exploits, stories have been handed down indicating that daily kills per sink box often ran into the hundreds. One such tale relates that one man, on opening day in 1879, keeping his gun cool by frequent immersion in the bay, accounted for over 500 redheads and canvasbacks between sunrise and sunset. Another report tells of a market hunter killing 7000 canvasbacks in the seasons of 1846 and 1847, shooting from batteries on the Susquehanna flats at the head of Chesapeake Bay.

The market hunter passed out of existence in 1918 when the Migratory Bird Treaty Act was born. This Act, an amalgamation of legislation between the United States and Canada, has protected migratory waterfowl to this day throughout the entire length of their range—the United States in winter and Canada where they breed in summer.

An act passed by the State of Rhode Island in 1846 is the first recorded step toward conservation of waterfowl in this country. From this beginning, other state legislation followed slowly, and in 1913 the Federal Migratory Bird Law prohibited spring shooting, hunting at night and shipment of birds. However, it was not until 1934 that the Federal Government began spending money to conserve waterfowl. In that year $8,500,000 was set aside to buy unproductive farm land and build it into breeding areas. The next step was to require every hunter over 16 years of age to buy a migratory bird hunting stamp, the proceeds from which were to go toward establishing refuges.

With hunters increasing and the duck population declining, shortened seasons and reduced bag limits quickly followed. Many other restrictions were evolved. Sink boxes were outlawed in 1935, along with the use of rifles and guns larger than 10 gauge. Automatic and repeating shotguns were limited to three shells, and definite shooting hours were established. In 1930 the bag limit on ducks stood at 25; in 1931, 15; 1933, 12; 1935, 10; 1944, 15; 1945, 10; 1946, 7; 1947, 4, where it remains today for about half of the country, five being the limit in the two western flyways.

While some feel the present regulations are too rigid, the tremendous increase in hunters makes them necessary if future generations are to be able to enjoy this fine sport.

The Bear in Early America

By EDDIE W. WILSON

TODAY the bear in America may be either pursued as game by the hunter or observed simply as a creature of interest and entertainment in our great wilderness area set apart for the re-creating of our minds, souls, and bodies.

In the early days, the bear not only was of great economic importance to the Indian but entered into his beliefs and myths. It later became important in American colonial history. In both eras, its predominant role was to provide man with food.

Slaying animals for food was usually entered into by the Indian with great solemnity because he thought certain animals were endowed with great powers.

Thus the Coeur d'Alene believed that the bear knew, saw, and heard everything, and would allow itself to be killed only out of pity for the people's hunger. After the bear was dead, the hunter sang over it the "Bear Song" in which he praised the animal for giving itself up and at the same time bewailed its death. On the other hand, the Okanagon hunter, paying respect to his slain bear, elevated its skull on the top of a long pole and asked it to keep off defiling influences.

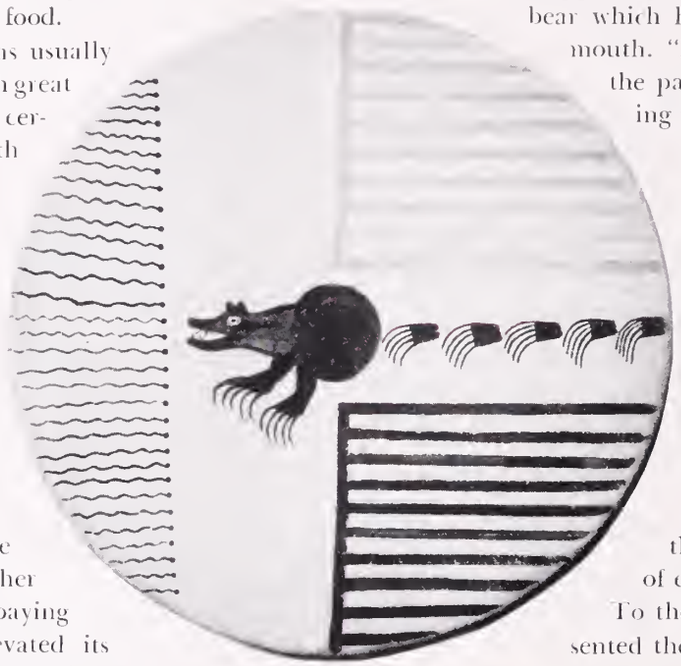


Photo from Smithsonian Institution

This is a copy of the original Crow Indian war shield now in the Smithsonian Institution in Washington.

The flesh of the bear was eaten either fresh or dried. Its skin was made into robes. Among the Senecas the bones were considered medicine that would bestow magical power. Warriors of many tribes wore necklaces of bears' claws.

Bear grease or oil was used not only as a seasoning in cooking but in other ways. Thomas Ashe and Dr. Henry Woodward have left quaint descriptions of the uses of bear oil. In 1682, Thomas Ashe, while advertising the real estate of the Lord Proprietors in Carolina to his English countrymen, said: "Bears there are in great numbers of whose Fat they make an Oyl which is of great Vertue and Efficacy in causing the Hair to grow, which I observed the Indians daily used, by which means they not only keep their Hair clear and preserved from Vermine but by the nourishing faculty of the Oyl, it usually extended in length to their Middles." In like manner, Dr Henry Woodward, a conspicuous figure in the Ashley River colony of South Carolina, tells of being entertained by the Indians who "first haveing oyled my eyes and joynts with beares oyle" set "befoore me sufficient of their food to satisfy at least half a dozen of their owne appetites."

A bear's tooth was sometimes used in medicinal practice. There is recorded the instance of the Illinois medicine man who sucked for some time that part of the body in which the patient felt pain. Then he suddenly arose and dropped upon the sick man the tooth of a bear which he had held concealed in his mouth. "Now you will live," he cried to the patient. "This is what was killing you!"

The bear was regarded by the Chippewa as an animal well acquainted with herbs because no other animal has such good claws for digging roots. Therefore, they thought that if a man dreamed of a bear during a fast he would be expert in the use of herbs for curing illnesses.

Among the various tribes the bear was usually the symbol of courage, strength, and sagacity. To the Zuni and the Tewa it represented the cardinal point, West, whereas to the Pueblo it was the symbol of war or medicine or both. The Osage made it a Life symbol and the symbol of old age and longevity.

Indian myths abound in references to the bear, and here its role varies. On some occasions it was portrayed as a creature of helpfulness, while in other instances it had a part in a humorous situation.

According to a Seneca myth, some enemy Indians raided a town and the people fled from their lodges in every direction. Among those was a woman carrying her bundled-up, two-day-old infant son in her arms. As she ran, she determined to throw the bundle down at the first opportunity in order that she might be able to run faster. On coming to a tree having a hole in one side, not far from the ground, she dropped the bundle into it. This was a bear's den, and as the bundle fell into the hole the old bear picked it up and unwrapped it. The bear nursed and cared for the baby in the same manner that she cared for her own cubs. Finally a hunter found the boy and adopted him as his own son.

On the other hand, the Cherokee storyteller must have

Heye Foundation photo

Cedar bark mat with painted decoration representing bears, made by the Kwakuitl Indians of British Columbia.

Heye Foundation photo

The Cherokee Indians of North Carolina made this bear mask, which is 13 inches tall

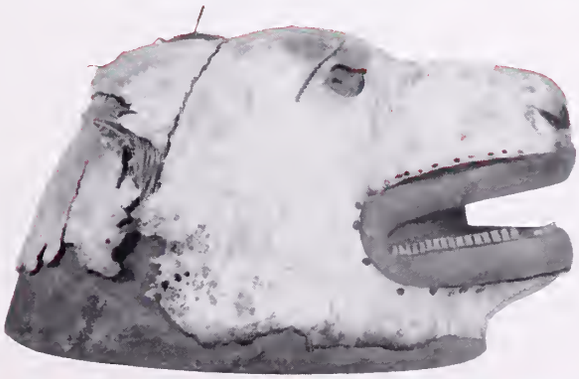


Photo from Smithsonian Institution

Carved out of a single piece of wood except for the inset rows of teeth, this bear helmet was manufactured by the Tlingit Indians. It was covered with skin and its lips were painted blue.

caused his audience to laugh when he told the story, "The Rabbit Dines the Bear":

The Bear invited the Rabbit to dine with him. There were beans in the pot but there was no grease for them so the Bear cut a slit in his side and let the oil run out until there was sufficient grease for seasoning the beans. The Rabbit looked on in great surprise, meanwhile thinking to himself, "That is such a handy way to get grease I'll try it sometime." When he started home he invited the Bear to have dinner with him one day in the following week.

When the Bear arrived at the Rabbit's house the Rabbit said, "I have beans for dinner and now I'll get the grease for the seasoning." So he took a knife and drove it into his side, but instead of oil a stream of blood gushed out and he fell over nearly dead. The Bear snatched him up and had hard work in tying up the wound and stopping the bleeding. Then the Bear scolded the Rabbit: "You little fool, I'm large and strong and lined with fat all over my body so a knife can't hurt me, but you're small and lean and can't do such things!"

These tales are only a small part of the colorful lore surrounding the bear, one of our finest native big-game animals.

* * *

Four Tagged Bear Reported

At least four of the 28 bear that were trapped and ear tagged last summer in the Augusta County area by the Game Commission's bear trapping research team (see "Trapping Bear Facts" in last month's VIRGINIA WILDLIFE) were taken in the season on bear west of the Blue Ridge Mountains November 24 - January 5.

One of these bears, a male, was first trapped and tagged in the Big Levels area on August 8, 1958. His age at that time was estimated to be three and one-half years and his weight to be 230 pounds. He was caught again on September 8 and released, still carrying his ear tags numbered 730 and 731. On November 24 George Mays of Lowesville, Virginia, bagged him near the Amherst-Nelson County line on the north fork of the Piney River. He weighed 240 pounds.

One of the other three ear-tagged bear taken was bagged in West Virginia.

The return of tags from ear-tagged bear to the Commission nets each cooperating hunter a $15 reward. In addition, information as to where and when the bear was taken will reveal how long bear live, how far they roam and how numerous they are in Virginia.

* * *

A four-page educational leaflet describing the habits of the black bear in Virginia is available from the Virginia Commission of Game and Inland Fisheries, Box 1642, Richmond, free of charge.

PREDATION (Continued from page 9)

tor control must be carried out. The biologists are not opposed to all control, as some sportsmen believe, but to some of the methods proposed. The arguments against the time-worn bounty system have been repeated so often that they hardly need restating here. Suffice to say that there is no surer way to waste the sportsmen's funds for the results obtained. Blanket state-wide or county-wide control programs are also inefficient, costly, and hazardous, because of their potential toll of other desirable wildlife, dogs and livestock.

The most obvious application of predator control is to protect livestock and poultry, fish hatcheries and game farms from serious losses. To predators, these areas represent artificially created concentrations of food. Such losses can often be overcome by cultural practices, such as penning open-range poultry, but where losses continue in spite of these measures, trapping and the destruction of the offenders is the only solution. Usually only a few individuals are responsible, and their removal will promptly end the trouble with little expense and a minimum of disruption of natural values. At times newly stocked populations of game or remnant populations of rare species must be given maximum protection if they are to survive, and local control of predators is necessary to prevent losses. In some instances the predators themselves become the rare species. Florida, for example, has recently placed the panther under full legal protection to prevent its extermination, and a growing number of states now protect all hawks and owls except when in the act of harassing livestock. The fox and bobcat are game species in their own rights, recognized as such by many state and local ordinances.

If predation on game still worries the hunter, there are two ways to beat the competition. One is to support all efforts by the state and by local organizations to improve food and cover for wildlife. A well-fed quail or cottontail living in a lespedeza field border has a life expectancy at least ten times as long as one eking out an existence in a close-cropped field. The second way is to beat the predators to the punch by supporting efforts by the Commission of Game and Inland Fisheries to liberalize hunting seasons, consistent with the biological needs of the species. Small-game populations reach their peak in early fall, dropping off to a low at the beginning of the breeding season. If the hunting season is set early, the hunter skims the cream and the predators work on the left-overs.

There is an axiom of wildlife management that you can't stockpile game animals. If any one patch of cover will support only one breeding pair of quail and one breeding pair of cottontails in May, any number of quail and rabbits above that number living there in September is doomed, provided there is no major change in local cover conditions between the two years. If the hunter fails to take the surplus, foxes, hawks, and owls will take a high percentage of what is left. What they miss will be removed by starvation, disease, and accident. If there were no predators, these factors would assume greater importance, and the end result would be the same.

The predators, in their own right, are an interesting set of characters when you get to know them. And we might as well learn to live with them without building up our blood pressures. Foxes, hawks, owls, and weasels will be around just as long as there are rabbits, quail, and rodents for them to hunt.

Bird of the Month:

The Carolina Wren

By DR. J. J. MURRAY

Lexington, Virginia

WHERE could one find a more appealing little bird than the Carolina wren? Tiny in size, bright in color and brilliant in song, volatile and effervescent in temperament, it is in all aspects charming.

In contrast with most of our songbirds, whose music is largely limited to the nesting season, the Carolina wren sings in season and out of season, at all times and in all weathers. A snowstorm does not put a pause to its melody; even a bitter wind can scarcely stop it. There is nothing commonplace about this little chorister; its repertory is almost unlimited. The most frequent item on the program is a series of notes, "teakettle, teakettle, teakettle," loud, sweet, ringing, with the accent on the first syllables, or sometimes a variation, "jereepa, jereepa, jereepa," with the stress on the second syllables. Again, it is a two-syllabled series, "wheedle, wheedle, wheedle," or "turdle, turdle, turdle," like the less familiar song of the Kentucky warbler. Even the call notes are interesting: a rolling "krrrt," or a trilling "krrr," or a somewhat harsher rattle. The variety, both in song and in conversation with its companions, is amazing.

The Carolina wren's actions are almost as interesting as its songs. The little creature seems to be plagued with an insatiable curiosity and with an infinite restlessness. It will come at once in answer to your squeaks. It is rarely still, except when a mother wren must keep an eye on a thicket-full of nervous youngsters. Perched for a second on a branch with its tail cocked over its back, then darting to another perch, now in and out through the mazes of a brush pile, it is always moving fast and always noisy with its comments.

This is the largest of our Virginia wrens. Rich reddish-brown above and bright buffy below, its wings finely barred with black, and a distinct white band over the eye, it is a handsome little fellow. In Virginia it is one of our most common birds, found everywhere except on the higher mountains.

The Carolina wren will nest anywhere it can find a hiding place for its creamy, cinnamon-marked eggs. It is fond of nesting about homes: in a regular nesting box, or in a roll of tar paper; in the corner of a tool box; in the pocket of a coat, or in a hat hung on a nail. In the woods it nests in an old woodpecker hole, in a crevice among roots, or in a sheltered brush pile. Sometimes it picks unusual sites. Once, in Rockbridge County, I found a nest in a hole in a bank, and another nest made of a mass of leaves and rootlets placed in a cedar tree.

On another occasion the wrens made a nest on the rim of an old-fashioned chandelier for coal-oil lamps in one of our country Sunday school buildings. When the children came in for Sunday school one afternoon the floor appeared to be literally covered with the tiny bob-tailed wrens that had just left the nest. It was a good time to use the famous verse from the 84th Psalm: "Yea, the sparrow hath found an house, and the swallow a nest for herself, where she may lay her young, even thine altars, O Lord of hosts."

Queen Creek —
A Daughter of the York

By NEVILLE ANN LONG
Williamsburg, Virginia

NEARLY every nature lover knows that Virginia offers both hunting and fishing to its countless tourists as well as to its native citizens. Fishing is naturally accented in the Tidewater area. If one investigates any of the larger creeks which flow into the York River, however, he will find both animals and fish.

Queen Creek is a navigable branch of the York River, with headwaters located about five miles from Williamsburg near Route 168, the main highway to Richmond. A bridge outside of famous Colonial Williamsburg goes over Queen Creek, but because the bridge is not too prominent, many motorists do not realize they are travelling over historic ground when they are on this road. Queen Creek played a very important part in the 18th Century commerce in Virginia. From about 1720 to 1760, Williamsburg's Capitol Landing—the main port for most British shipping—was located on the banks of Queen Creek at this little bridge.

The creek is lovely at any time of the day, but perhaps is at its best about 5:00 a.m. There are marshes along both banks, and if one rises early enough he will see the marshes waking up. There is something almost mystical about the way the mist gradually disappears as the sun rises above the tree tops. At this hour even the occasional planes which come over seem silent, and if one stays long enough he feels that this is 17th Century Williamsburg territory, the virgin land, untouched as yet by the men who were to make America an independent nation.

At the time Queen Creek was used for shipping, according to old records, it was deeper — deep enough to accommodate 90 to 100-ton sloops and schooners. However, because of the farming along its banks, much silt has accumulated in the creek over the centuries, this accounting for the marshes which provide a refuge for wildlife.

The three kinds of wildlife which the river and the creek have most in common are gulls, fish and crabs. Actually there are two kinds of crabs, the large edible ones and the tiny ones which live in the mud banks along the edge of the marshes. They have one huge claw and provide an endless source of amusement when a dog decides to chase them. The gulls fly inland to rest on the marshes, where one may see them standing on the banks.

There are some similarities between the York River and Queen Creek. The rise and fall of the tide is the same and the water is similar, part fresh and part salt. Both have sea nettles which the unwary bather is likely to meet when swimming. The two are really quite different in other ways, however. The York River flows rapidly, and if there is a strong wind it takes on an unruly air, sweeping everything before it. Queen Creek, on the other hand, like most tidal creeks, is calm and peaceful most of the time. Only when a northeast wind blows a rain squall before it do the marshes and water in the Creek appear ruffled at all.

Another difference between the river and the creek is in the forms of wildlife one can observe. The river is noted for ducks, but a careful observer can find herons, deer, snakes, rabbits, beaver, turtles and even an occasional opossum or raccoon in the marshes along the edge of the creek.

Both river and creek are truly lovely, but if one has to decide which he prefers, the Creek might win. It is rightly named for Queen Anne of England, for it is calm, beautiful and ageless like her portraits.

COMMISSION BRIEFS

Princess Anne County Watershed Plan Delayed

At the meeting of the State Soil Conservation Committee in Richmond on November 13, the work plan for the proposed Princess Anne County watershed development was tabled pending further study. The following resolution was passed by this committee: "The Virginia State Soil Conservation Committee (resolves that it) defer action on the Princess Anne County Watershed Work Plan and strongly requests that the Soil Conservation Service and the Fish and Wildlife Service make further effort to compromise their differences. In the event that a satisfactory compromise cannot be worked out by these two organizations, a third party which is competent in the technical fields under controversy be called in to render opinions on the points at issue." The Virginia Game Commission, the North Carolina Wildlife Resource Commission and the U. S. Fish and Wildlife Service were alarmed at the damage this project could do to the very valuable Back Bay-Currituck Sound waterfowl and fishing areas and had suggested that the silt-laden waters be directed toward another outlet. A compromise solution is being sought.

Wildlife Field Trip Held

Twenty citizens of Lexington and Rockbridge County, Virginia accompanied representatives of the Virginia Commission of Game and Inland Fisheries, the U. S. Soil Conservation Service and the U. S. Forest Service on a wildlife field trip October 28, 1958, reports Robert H. Giles, Jr., District Game Biologist.

Participants travelled by school bus to the James River District of the George Washington National Forest to inspect and learn the value of wildlife management practices there. Coffee and doughnuts were served at the Brattons Run Game Management Unit Cabin where equipment used in habitat improvement was shown. Then the group proceeded to the Blacks Run Wildlife Development where a waterhole was seined to demonstrate how ponds must be kept in balance to provide good fishing. Soil character was demonstrated and discussed by Burt Hawkins, S.C.S. conservationist. Leon Powell of the U.S.F.S. gave an archery demonstration after which the group looked over forest clearings made for grouse and turkey. Ranger George Nietzold discussed the cooperative wildlife program between the Commission and the Forest Service and explained his duties as Ranger. The group also inspected a F.F.A. youth's planting of game bird mixture.

Shenandoah Access Areas Purchased

At its meeting in Richmond on November 12, the Virginia Game Commission approved the purchase of two small plots of land offering access to the Shenandoah River in Clarke and Page counties for fishermen wanting to make boat trips on the river. The Commission is working with the State Highway Department in developing river access points at highway bridges and is buying other points to supplement these. The Clarke County access point will be about halfway between Castleman's Ferry Bridge and Harry Flood Byrd Bridge and will make possible boat trips of about seven miles. The Page County site proposal is about one mile downstream from the Grove Hill Bridge and will make possible boat trips of eight miles to the Alma Bridge on Route 340 or to the town of Shenandoah. Each area will involve the purchase of about an acre of land.

Technicians Collect Gizzards for Food Habit Study

Commission game technicians checked out 167 hunters at Back Bay on the opening day of waterfowl season, found they had bagged 100 ducks and 51 geese, and managed to collect 145 gizzards from these birds for food habit studies, according to Roland Halstead, game warden supervisor.

Goshen Boys Win Food Planting Contest

Ronny and Sonny Thompson of Goshen, Virginia joined efforts to win the annual wildlife food planting contest sponsored by the Rockbridge County Board of Supervisors, according to District Game Biologist Robert H. Giles, Jr. The contest, which is promoted by the Soil Conservation Service and the Virginia Commission of Game and Inland Fisheries, was open to all youth in the county. The seed was supplied by the Commission. Agricultural teachers in Rockbridge County schools were influential in the outstanding success of the contest this year.

Winners were selected on the basis of seed bed preparation, fertilization, seed germination, competition of weeds and seed production. Judges frequently found wildlife such as quail and rabbit feeding in the areas.

Other winners were: second prize, Herb Chittum, Rt. 2, Lexington; third, Jerry McDonald, Goshen; fourth, Jackie Ballard, Rt. 2, Lexington; fifth, Leroy Winter, Goshen; sixth, Billy Dickson, Rt. 2, Lexington; seventh, James Armstrong, Rt. 5, Lexington; and eighth prize, Freddie Fix, Rt. 2, Lexington. Judging was done by Giles and Earl Edwards of the Soil Conservation Service.

White Bass, Walleye Fishing Picking Up in Claytor Lake

White bass and walleyes of catchable size were taken from Claytor Lake in Pulaski County for the first time last year, according to Commission fish biologists. Threadfin shad are stocked in this reservoir to provide food for these game species.

Louisa County Food Patch Contest Success

A wildlife food planting contest in Louisa County, which created a considerable amount of local interest and cooperation, reached its climax November 5, 1958, reports district game biologist Howard Sheldon. Last spring W. G. Smith and V. G. Vaught, owners of the Hidden Acres Shooting Preserve at Trevilians, decided to sponsor a wildlife food patch planting contest through the F.F.A. as an incentive to get more landowners and their sons interested in providing a

Left to right are Frankie Waldrop, Jr., Johnny Riddell, Jr., Harry McDonald and Charles Rosson; standing are Mr. Vaught and Mr. Smith.

place for wildlife on their farms. First, second, and third prize winners were to be allowed a day's shoot on the preserve.

Planting material was furnished by the Virginia Commission of Game and Inland Fisheries and planting was supervised by Mr. Pennington and Mr. Lancaster of the Louisa High School vocational agriculture department. Approximately 80 boys participated in the contest, planting about 160 food patches. In early October the patches were judged and the prize winners selected. The first prize was awarded to Charles S. Rosson of Trevilians, second prize went to John Reddell, Jr., of Louisa, and Harry McDonald of Kents Store and Frank Waldrop, Jr., of Pendletons tied for third prize.

Pheasants and ducks for the November 5 "shoot" were furnished by the Hidden Acres Shooting Preserve. A barbecued chicken dinner was furnished by the F.F.A. chapter and the Hidden Acres Shooting Preserve. Ammunition for the shoot was donated by the Peoples Hardware Store in Louisa. H. T. Payne, Louisa County game warden, bought county hunting licenses for each of the boys. Needless to say, the program was a success.

Food patch planting contests, sponsored by organizations throughout the state, demonstrate to individuals the effectiveness of providing food and cover for game. If you know of organizations looking for projects to sponsor, this may be an idea.

Millions of Ducks Wasted

Almost 5 million waterfowl will be lost and wasted this year unless sportsmen do something about it, according to the Atlantic Waterfowl Council. In past years technicians were forced to add 25 percent more kill to the annual hunting harvest figures because of wastage by crippling and unretrieved birds. Cripple-wastage cuts heavily into our harvestable waterfowl crop and it cuts down on the survivors that make up our breeders for the following year.

Nation-wide waterfowl studies have shown that losses from crippling and unretrieved birds range from 16 to 58 percent, with a shocking national average cripple loss of 25 percent. Think of it. For every 100 ducks and geese knocked down, 25 are never recovered.

The principal causes of cripple loss are trigger-happy shooting, inability to judge distance, poor marksmanship, overestimating the killing range of modern shells, poor sportsmanship and failure to retrieve birds.

Pittsylvania IWLA Chapter Holds First Field Trials

First Annual Field Trials of the Pittsylvania County Chapter of the Izaak Walton League, held on October 25 and 26 on Albert Ramsey's Farm near Gretna, Virginia, drew some 200 spectators and 37 individual dog entries. Winners were: First Place "Open Puppy"—Mickey, owned by James Compton of Hurt, Va. and handled by Alvin Dawson of Hurt, Va.; "Open Derby"—Haberdasher's Spunky Beth, owned and handled by Dr. G. E. Calvert of Lynchburg, Va.;

Winners in the first field trial to be held by the Pittsylvania County Chapter of the I.W.L.A. Oct. 25-26.

"Izaak Walton Member's Gun Dog"—Frisky, owned and handled by C. E. White of Monroe, Va.; and "Open Gun Dog"—Frisky, owned and handled by G. H. White of Monroe, Va.

Eel Strait Jacket Used on Rappahannock

According to George W. Todd of Richmond, the latest gimmick being used on the Rappahannock River to protect fishermen from the slashing teeth of eels they occasionally catch is called a "strait jacket." This two-foot length of one-and-a-half-inch pipe with a slit along the entire length is slipped over the eel, the line going through the slit. With the creature under control in the pipe, the fisherman can wield his knife to free his hook.

Boonesville Farmer Kills 471-Pound Bear

Ernest Standup, 75-year-old Boonesville farmer, shot a 471-pound black bear about midnight November 5 as the animal was in the act of killing Standup's chickens. Standup shot the bear in the left side with a single charge of No. 6 shot, killing the animal instantly.

Sturgeon Roped Out of Rappahannock

Warren Brown, 79-year-old retired blacksmith, lassoed a seven-foot, five-inch sturgeon out of the Rappahannock River near Fredericksburg August 29. Brown, who enlisted the aid of a friend to pull the sturgeon out of shallow water where it was stranded, estimated that it weighed over 200 pounds.

National Forest Receipts Hit Billion-Dollar Mark

A. H. Anderson, supervisor of the George Washington National Forest, reports that the billionth dollar in national forest receipts was deposited in the Federal Treasury on November 21, 1958. The one billion dollars includes gross income since 1905, when the Forest Service was established, to 1958.

Receipts reached the billion-dollar point near the 100th anniversary (October 27, 1958) of the birth of Theodore Roosevelt, who established so many of the national forests. Also, May 15 of this year was the 50th anniversary of Roosevelt's famous governors conference that launched conservation as a national policy—to conserve minerals, waters, forests, soils, and wildlife.

Do Fish Die of Indigestion?

The Wyoming Game and Fish Department received a report from David E. Lawrence, who found a 26-pound Mackinaw trout dead on the shore of Middle Piney Lake. The fish was 39 inches long, 10 inches wide and 24 inches around the girth. Concerned at what caused the trout's death, Lawrence performed an autopsy and found that the trout's stomach contained a sizeable ball of monofilament line, several large lead sinkers, three spinners, one minnow hook, two regular hooks, one swivel and several bones.

Public Land Withdrawal for Access Authorized

The Secretary of the U. S. Department of the Interior has the authority to set aside public lands for the purpose of permitting public access to hunting or fishing areas under provisions of the Coordination Act.

This opinion of the Department solicitor dated September 19, 1958, supersedes and reverses an opinion of the associate solicitor, dated July 9, 1957, that the secretary did not have such authority.

The opinion, announced by solicitor Elmer F. Bennett, recently elevated to under-secretary, traced the authority through several acts and executive orders and emphasized that the controlled harvest of surplus fish and game populations, as expedited through adequate access, is a necessary and integral part of wildlife conservation practices.

Commission Personalities

Hampton Roads District Supervisor

ROLAND OTTO HALSTEAD, supervising game warden in the Hampton Roads District, has been with the Virginia Commission of Game and Inland Fisheries since June 1, 1936, when he was appointed regular game warden for Princess Anne County. Born at Virginia Beach, Virginia, on May 29, 1896, he has lived in Creeds, Virginia, since 1919. In 1918, he married the former Melinda West of Norfolk, Virginia. The Halsteads have four sons, six daughters and 17 grandchildren.

After attending public schools of Norfolk County, Virginia, and working four years for the Virginia Railroad, Roland heard "the call of the wild" and established a private hunt club in the Back Bay area where he acted as guide for hunting parties. He was game warden with the U. S. Bureau of Biological Survey in 1923. Subsequently, he was hired as manager for a very large private hunt club in Back Bay made up of out-of-state men. He served in this capacity for 10 years before joining the Commission.

Promoted to game warden supervisor on January 1, 1952, Mr. Halstead, in charge of 22 game wardens and three game patrolmen, is responsible for the enforcement of all game, fish and dog laws in Isle of Wight, James City, Nansemond, Northampton, Southampton, Sussex and York Counties and Hampton, Norfolk, Portsmouth and Warwick Cities and enforcement of game and fish laws only in Accomack, Norfolk, Princess Anne and Surry Counties. This area, which includes Eastern Shore, Dismal Swamp and Back Bay, takes in most of the best waterfowling country in the state as well as many good upland hunting and bass fishing locations.

A unique facility on this district is the wardens' headquarters at Back Bay. Here are bunks for wardens assigned to the Back Bay area, radio equipment for contacting all of the district's wardens, boathouses for the Commission's powerboats and home base for the Commission's pontoon airplane and its pilot. The headquarters is also a clearing house for hunting information.

Two of Mr. Halstead's sons have followed in their father's footsteps. Robert, at one time a Virginia conservation officer, is now a federal warden stationed in North Carolina. Otto is one of the regular game wardens in Princess Anne County.

Mr. Halstead is a member of the Bethel Methodist Church at Creeds, Virginia, and belongs to the Tidewater Anglers Club.

Wildlife Questions and Answers

Ques: **January is one of the coldest months of the year in Virginia. Since wildlife suffers appreciably during periods of extreme low temperature, what can the average person do to help wildlife during such times?**

Ans.: Although the Game Commission has encouraged the artificial feeding of wildlife during periods of heavy ice and snow, the artificial feeding of wildlife on an extensive scale is not practical. Local effort with corn and similar grains is a worthy project, but it cannot take the place of a long-range conservation effort to provide the kind of food and cover that wildlife needs through natural conditions. That is why the Commission has been pleading the cause of good land management favorable to wildlife throughout the agricultural year.

Ques.: **Does the snowy owl ever appear in Virginia?**

Ans.: Only on rare occasions does the snowy owl drift into the high mountain areas of the Old Dominion. The checklist of the Virginia Society of Ornithology has several records of snowy owls appearing in the state.

Ques.: **Is it legal to use an electrical sounding device in the decoying of ducks and geese?**

Ans.: It is illegal. Electrical sounding devices were outlawed by the Fish and Wildlife Service several years ago.

Ques.: **Are there still many bears in the Dismal Swamp?**

Ans.: No. The bear population in the Dismal Swamp has appreciably decreased in the swamp in the last 25 years. The average kill is around six bears on the Virginia side.

Ques.: **What is the rutting season for the white-tailed deer in Virginia?**

Ans.: As a general rule rutting takes place in late October, November and early December.

Ques.: **Why is it that the supply of otters has not increased when trapping for furbearers generally has decreased?**

Ans.: The otter never was plentiful in Virginia or America. It needs extensive marshes and wild water cresses for a home and such habitats have appreciably decreased in recent times. Most of Virginia's otters are now confined to the tidewater counties.

Ques.: **Is it all right to keep a gray squirrel in captivity?**

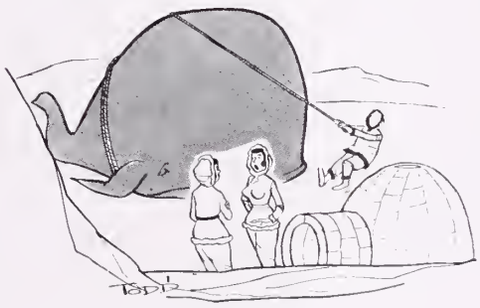
Ans.: No. A gray squirrel is a legal game animal in Virginia and no game animal can be kept in captivity without a special permit from the Commission.

Ques.: **Is it possible to tell the difference between a buck and doe deer from tracks alone?**

Ans.: No. Studies show that even the experts cannot judge the sex of a deer by hoof prints alone.

Ques.: **What is the Commission doing for the songbirds of the state?**

Ans.: The Commission is charged with the protection of *all* forms of wildlife, not just the game species. Through its law enforcement, education and game divisions, the Commission encourages bird protection wherever possible. Many of the aspects of the Commission's habitat improvement program benefit songbirds directly. Also, the Commission last year was instrumental in giving certain birds, such as the hawks and owls, additional protection.



"I don't mind him catching fish, but I hate to clean them."

Ques.: **Is it true that there are now more deer in Virginia than in the days of Captain John Smith?**

Ans.: Yes. Restoration, good deer management results and favorable types of forest growth have given Virginia the largest deer herd in its history. Commission biolgists estimate that there are now over 200,000 whitetails in Virginia.

Ques.: **Is the ruffed grouse known by any other name in Virginia?**

Ans.: Yes. The most popular local name for this bird in the western part of the state is mountain pheasant. Other names are thunder bird, fool hen, partridge, drummer.

Ques.: **We have several acres of land around our school and wonder what we can do to encourage wildlife around our premises.**

Ans.: Send for the Commission's reprint "Nesting Boxes, Feeding Stations, Bird Houses, Wildlife Shelters and How to Build Them," which gives pointers on what can be done to encourage wildlife in populated areas.

Ques.: **What kind of shrubs can I plant around my suburban home to attract wildlife?**

Ans.: A good mixture of evergreens and fruit-bearing trees will attract birds around any suburban home. The evergreens help supply protection while food-bearing trees and shrubs will hold birds for their food value.

Ques.: **My twelve-year-old is interested in going hunting with me and I'd like to know if he needs a license.**

Ans.: If the boy is participating in the act of hunting in any way, he is required to have a license.

BOOK REVIEWS

The Book of Small Mammals

By Ted S. Pettit. Garden City, New York. 1958. Garden City Books. 56 pages. Illustrated. $2.95.

A delightful and colorful book for young people on common American small mammals, covering such interesting animals as the raccoon, opossum, skunk, bats, the weasel family, badger, foxes, the wild cat family, wild rodents, rabbits and hares, porcupine and armadillo. A fine gift, written popularly by Ted S. Pettit, conservationist with the Boy Scouts of America. Excellent four-color illustrations are by G. Don Ray.

Living Silver

By Burns Singer. Boston. 1958. Houghton Mifflin Company. 232 pages. Illustrated. $3.75.

Here is a rare and unusual book written by a poet who is also a marine scientist. It shows a vivid picture of the sea around us, its moods and its power, of the fish that live and spawn in its depths and of the men who go down in ships to bring the halibut and the haddock, the cod, herring and mackerel to our dinner tables. No mere sea yarn, *Living Silver* is a remarkable fusion of science, adventure and quiet philosophy, marking the author as a keen scientific observer and a skillful master of words.

DUCK Shooting

WATCH THAT MUZZLE. USE EXTRA CAUTION IN CLOSE QUARTERS.

KNOW YOUR WATERFOWL AND THE REGULATIONS THAT PERTAIN TO THEM.

KNOW THE RANGE OF YOUR GUN AND STAY WITHIN IT. LONG SHOTS DON'T KILL.

FOR MORE SPORT AND FEWER LOST CRIPPLES, USE A DOG.

BE A SPORTSMAN AT ALL TIMES. ENJOY YOUR SPORT MORE.

"TOOLS OF THE TRADE."